EXCERPT FROM GLIMMER: HOW DO DESIGNERS JUMP THE FENCE TO ORIGINALITY?

In this excerpt from the new book GLIMMER: How design can transform your life and maybe even the world (Penguin Press), author Warren Berger takes a look at how Bruce Mau, Stefan Sagmeister, and other top designers use lateral thinking and other methods to spark original ideas and fresh insights.

How do the best designers come up with innovative, original ideas? For many, it starts with a "glimmer moment"—the act of envisioning a solution that does not yet exist and may not even seem possible at the time. By relying on "abductive reasoning," or the ability to think about and picture what might be, designers can glimpse possibilities that lie on the other side of the fence.

That doesn't make the jump any less scary. Often, the designer/inventor Dean Kamen has no idea, on his most challenging projects, whether he can clear that fence at all, or what kind of landing he's likely to have if he does. Kamen says he grapples with this uncertainty constantly: "You roll around in bed at night, thinking 'Am I trying to do something that's impossible?' " All that tossing of sheets notwithstanding, Kamen, like a lot of innovative designers, has an unshakeable belief that he can alter reality, even in areas where he has no specific expertise.

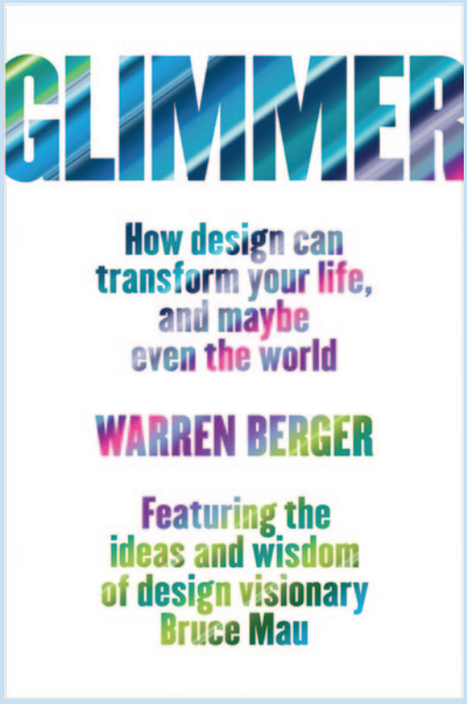
The reason why designers like Kamen and Yves Behar believe they can do the impossible is partly because they've already done it. At least that's one of the theories of Roger Martin, dean of the Rotman School of Management in Toronto. Martin has analyzed the way designers think and create. Bruce Mau has been one of his study subjects, as have the designers Milton Glaser and Massimo Vignelli. According to Martin, top designers have certain common characteristics, one being their rock-solid belief that reality is subject to change. When designers are confronted with a challenge that has no real-world answer, Martin notes, "instead of saying, 'Well that's life,' they are inclined to say, 'No, there has to be a better answer out there if I think a little bit harder.'"

And once they've come up with a breakthrough solution on one problem, they're better prepared to do so the next time, and better still the time after that. Martin refers to this as the "upward spiral" of solving problems, wherein the more you do it, the more you can do it. An experienced designer will look at an "impossible" problem and his or her reaction, Martin says, "will be, 'Ah, I know this game. I've been in this situation before. It's fine if there are no existing good answers out there, because my job is to design a better answer.' And they proceed with confidence from there."

According to Martin, designers "live in an expansive world where they believe the only thing limiting us is the stuff we haven't figured out yet." To be comfortable taking on tough design challenges, you must embrace ambiguity and complexity. Most of us, Martin notes, try to simplify problems and make clear-cut choices; we strive to construct a single, clear "mental model" when we're thinking about a challenge and trying to envision changes and solutions. But a designer (and, Martin points out, this can apply to other creative minds, too, including some top business executives he has studied) is comfortable holding conflicting ideas in his/her head at the same time. "The designer lets a lot of different models float around in the mind at the same time. And they select parts and pieces from those existing models to create new and better models."

This is another way that designers "jump fences"—by mentally hopping from one realm of thought to an entirely separate one, connecting ideas from that first world to ideas from the other. These connections are actually problem-solving insights—What if I put this with that?—that the designer and author John Thackara calls "smart recombinations." They often connect ideas and possibilities that would seem to be unrelated.

For example, when the designer Van Phillips was working on the challenge of creating a more flexible prosthetic leg, he relied on a number of connections and recombinations. Foremost in his mind at the time, Phillips says, was the letter "C"—his father owned a C-shaped Chinese sword and Phillips had always been impressed by the flexibility of the blade. At the same time, Phillips was studying the mechanics of diving boards; he wondered if the same kind of spring force could be applied to a prosthetic. Somewhere in the midst of all this, he happened to learn that the hind leg of a cheetah functions in a very distinctive way, with the tendons compressing and releasing in a manner that yields great elasticity. Phillips began to connect all of this—along with his knowledge of the unique properties of carbon graphite—to begin to try to jump the fence to a better artificial leg. The lower-leg-and-foot prostheses he eventually created—appropriately named the Cheetah, with no heel and a distinctive C-shape—changed the prosthetics industry, as well as Phillips' own life. He'd lost his own foot in an accident and the Cheetah enabled him to



return to running and jumping. But it was all made possible by the lateral leaps Phillips made as he connected bits and pieces from the animal kingdom, the local swimming pool, and the battlefields of ancient China. All of us have the ability to make these surprising new connections—researchers say the brain's right hemisphere is fertile ground for such far-ranging, hop-scotching activity—though good designers have a natural eye for spotting patterns and discerning possible relationships between things that most of us view as being separate and unrelated. Once they see a possible relationship, they work to make the pieces fit. "Designers are trained to synthesize," according to Charles Cannon, a professor at the Rhode Island School of Design.

That propensity for synthesizing may explain why so many designers tend to hoard scraps in their workshops and file drawers, saving a little piece of everything they've ever used on projects in hopes they can use it again, in a new way. But the bits and pieces often reside in the mind of the designer. Michael Bierut's brain "is a compendium," says his Pentagram partner Paula Scher. "He absorbs everything and then uses what he needs at the right moment." Bierut himself compares design to "doing a crossword puzzle"—you have to fill in the blanks with the right idea, which may be based on something you saw or learned years earlier.

George Lois, meanwhile, speaks of the thunderbolt that claps when a designer makes a connection. But this bolt "does not come from heaven," Lois says. "It may seem like it's from out of the blue, but it's all from life experience, from your understanding of the world around you, of history, of art, of sports. You have to have a real sense of what the hell's going on in the world and in the culture." (Some of Lois's great Esquire magazine covers involved brilliant juxtapositions and smart recombinations that connected, for example, Muhammad Ali and St. Sebastian).

Even as they tap into a wide range of influences, designers trying to think of fresh ideas tend to have the same problem as the rest of us—their minds too often gravitate naturally toward the familiar. It's true even for someone like Stefan Sagmeister, considered one of the most wildly original and unconventional designers working today. Sagmeister says it's a constant struggle to avoid falling back on familiar ideas. He cites the philosopher Edward De Bono's theories about "lateral thinking," in which De Bono asserts that the brain has a natural propensity for repetition because that's when it functions most smoothly and efficiently (it's why you can multitask easily as long as the tasks you're doing are familiar). "But when it comes to ideation, or thinking of something completely new, this whole repetition thing is actually a drag," Sagmeister says. Wanting to do the same things over and over, the brain will tend to think of ideas it has thought of before, as if they were new. "Happens to me all the time," Sagmeister says. "I want to think about a new idea and the first thing that comes up is, 'Oh, can we do a die-cut like we did three weeks ago?' What De Bono says is that people build their whole careers on this kind of repetition."

To avoid that, Sagmeister and others go to great lengths to try to force themselves to "think laterally"—to break out of the familiar patterns and push their thoughts down unfamiliar pathways, sometimes by trying to make illogical connections. "It can be helpful to think about an idea from a point of view that makes no sense whatsoever," Sagmeister says.

The approach of trying to view design challenges from unusual angles can be effective because "it gets you looking in the opposite direction from everyone else," says Tom Monahan, whose Providence-based creative coaching firm, Before & After, works with designers and marketing executives on how to think more creatively. Monahan uses an exercise known as "180-degree thinking" in which people start out trying to conceive of something that would have the opposite effect of what they're actually trying to create—such as a car that is unable to move or an oven that doesn't cook. "You start out making something badly, and then see if you can make that bad thing into something good," Monahan says. "Along the way, you may happen upon some unusual ideas and connections."

According to Monahan, it's also important to "disengage"—to break the usual pattern of the way you might normally think about solving a problem. It can also be important to disengage in the physical sense when trying to come up with ideas: Sagmeister is a believer in taking creative

FAR LEFT:
Bruce Mau

LEFT:
Guateamala Poster by Mau

sabbaticals, or at the very least, unplugging and disconnecting. "If things are coming at you—phone calls, e-mail, co-workers—you're constantly reacting, and in fact it's easier to react than to create," he says. "So all of us who constantly complain about e-mail—within that complaint is also an excuse, because it's inherently easier to return e-mails than to actually create something." Mau notes that it can also be important for designers and creative people to try to "slow down" and to "desynchronize from standard time frames" in order to allow the creative mind to work its magic.

Recent studies on insights, conducted by Northwestern University professor Mark Jung-Beeman, show that if you focus too intensely on a problem, you tend to get stuck in the more logical left hemisphere, but as you relax, the cortex is freed up to conduct a more far-reaching search through the right hemisphere of the brain. What it's looking for are remote associations that can help solve the problem in unusual and perhaps illogical ways. According to Jung-Beeman, when a "serendipitous connection" is made, the insight suddenly becomes clear.

Is it possible to encourage the kind of thought processes and behaviors that enable designers (and the rest of us) to jump fences and make connections? Designer Bruce Mau maintains that in order to get to originality and innovation, designers must be given free range to venture far and wide in their thinking. They mustn't be penned in by habit, by convention, or even by disciplinary boundaries—all of the many and various barriers that, in Mau's view, represent "attempts to control the wilding of creative life."

In his studio, Mau developed a working process that encouraged designers to avoid doing too much upfront research—so that they could take advantage of what Mau calls the period of "not knowing," at the outset of an unfamiliar task or challenge. "When you don't know what should be done, or how something is supposed to work, it's a brief pocket of possibility," he says. "You're free to speculate on something unencumbered by the conventional structures."

Mau thinks designers and other creative problem-solvers should "speculate" first, and research later. The idea is to come up with wild ideas, scenarios, possible solutions; then to sketch them, film them, express them in some rough form—but not to research them to a premature death. Mau believes that in those earliest stages of thinking about a problem, when people are unencumbered by data, expert opinion, and conventional wisdom, they are most likely to stumble upon and be open to fresh, unusual, and possibly game-changing ideas. "If you start out speculating," he says, "you'll find yourself saying, 'It'd be exciting to try something like this—I wonder if it's possible?' Then later you do the research to find out."

During periods of feeling "lost" on projects, Mau also found that there was a unique kind of creative energy and resourcefulness that seemed to come to the fore when people were on unfamiliar turf. "If you're lost in the woods," Mau has observed, "everything about your surroundings takes on added significance. Suddenly you have to navigate and negotiate every detail of the environment, processing all of it while trying to regain your bearings." When people are in this "hyper-attuned" state, he reasoned, it's an ideal time to experiment and speculate, because the mind is wide-open and the senses are alive.

To maximize creative opportunities during the temporary state of not knowing, Mau has developed a number of studio guidelines focused on ways to encourage experimentation, and free association. He stresses the importance of providing designers in the studio with enough time and security to experiment, to connect ideas and explore adjacencies—in a word, to "drift." And giving designers an hour or two to drift is not enough, Mau believes. That limited amount of time will bring forth the surface ideas, but not the "deep woods" ones; projects should be scheduled such that people can have days or weeks to drift.

And during this period, criticism of ideas should be tempered if not withheld. "Most people are too quick to criticize and cut off ideas," Mau says. That criticism should be postponed until the later stages of creative development, when all ideas get subjected to rigorous critical analysis and testing to separate out the best. Mau has also instilled in his studio the practice of "capturing accidents"—wherein failed experiments are documented, preserved, and practically worshiped. They are viewed as successes that simply have not happened yet—or as Mau puts it, each one is "the right answer in search of a different question."